Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525–1559 MHz and 1626.5–2660.5 MHz, 1610–1626.5 MHz and 2483.5–2500 MHz, and 2000–2020 and 2180–2200 MHz	)	ET Docket No. 10-142
	)	
Amendment of Parts 1, 21, 73, 74 and 101 Commission's Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advance Services in the 2150–2162 and 2500–2690 MHz Bands	)	WT Docket 03-66
	)	
Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF	)	ET Docket 10-235

To: The Commission

EIBASS Reply To Globalstar Opposition to the EIBASS Petition for Reconsideration of the ET Docket 10-142 Report and Order

1. Engineers for the Integrity of Broadcast Auxiliary Services Spectrum (EIBASS) hereby respectfully submits its reply comments to the August 25 Globalstar *Opposition to Petition for Reconsideration* of the May 27, 2011, *EIBASS Petition for Reconsideration* of the April 6, 2011, ET Docket 10-142 Report and Order (R&O). The July 29, 2011, public notice regarding the EIBASS *Petition for Reconsideration* was published in the Federal Register on August 10, with a 25-day deadline for filing of replies to oppositions to the EIBASS *Petition for Reconsideration*. Twenty-five days from the Federal Register publication date is September 4, but because September 4 is a Sunday and September 5 is Labor Day, a federal holiday, the deadline for replying to the Globalstar comments is September 6, 2011. Therefore, this EIBASS reply is timely filed.

EIBASS Reply To Globalstar Opposition to the EIBASS Petition for Reconsideration of the ET Docket 10-142 Report and Order

I. EIBASS Comments and Petition for Reconsideration Are Entirely Pertinent to the ET Docket 10-142 Rulemaking

2. Globalstar argues that the EIBASS comments to the ET Docket 10-142 rulemaking are irrelevant to the MSS ATC R&O."[1] Globalstar is mistaken. The EIBASS comments to the ET Docket 10-142 were pertinent, since that rulemaking explicitly refers to 2,483.5–2,500 MHz, which is grandfathered TV Broadcast Auxiliary Services (BAS) Channel A10. Thus, the EIBASS Petition for Reconsideration was also pertinent and within the scope of the rulemaking.

II. The Only Effective Solution to the Decision To Allow S-Band MSS ATC at 2,487.5–2,493 MHz Without Causing Harmful Interference to Grandfathered A10 Operations is for the Commission to Re-farm the 2.5 GHz TV BAS Band as Proposed by SBE in 2004

3. Globalstar continues to argue that "grandfathered TV BAS facilities operating on Channel A10 can share spectrum and coexist on a co-channel basis at 2,483.5–2,500 MHz."[2] Yet still unexplained by Globalstar is how a cellular-like system of co-channel terrestrial Mobile Satellite Service (MSS) Ancillary Terrestrial Component (ATC) base stations, whose transmissions would be automatically triggered by subscribers making telephone calls, could ever accomplish real-time frequency coordination with mobile and unpredictable electronic news gathering (ENG) operations.

4. Both the Wireless Telecommunications Bureau (WTB) and the Office of Engineering and Technology (OET) found years ago that ENG operations and CMRS could not share spectrum in the same area at the same time. It was for that reason that the Commission refarmed the 2 GHz TV BAS band, from 1,990–2,110 MHz, to 2,025–2,110 MHz, in the ET Docket 95-18 and WT Docket 02-55 rulemakings. The laws of Physics have not changed so the same mutual exclusivity problem applies here.

5. Globalstar continues to argue that there are so few grandfathered TV BAS Channel A10 stations that frequency coordination would allow band sharing,[3] and that argument is as flawed now as it was years ago. Both SBE and now EIBASS continue to explain why that assumption is incorrect. But since Globalstar seems unwilling to deal with reality on this point, EIBASS will once more explain why Globalstar is again mistaken.

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1 Globalstar Opposition, at Page 2.
2 *Ibid.*, at Page 4.

6. As the SBE explained to the Commission over 28 years ago in Docket 82-334[4], the essence of TV BAS 2 and 2.5 GHz electronic news gathering (ENG) depends on time-critical mobile operations. The nature of breaking news means that locations are rarely known in advance. As SBE explained in some detail in the 82-334 proceeding, TV stations typically employ multiple, high-elevation receive sites with either omnidirectional receiving antennas, or directional, but steerable, receiving antennas to ensure a higher likelihood of being able to receive an incoming ENG signal, regardless of the location of an ENG truck.

7. As previously mentioned, one of the conclusions of ET Docket 95-18, was that TV BAS, and especially TV Pickup operations, cannot share spectrum with MSS devices in the same area at the same time; they are mutually exclusive uses, in that both involve area-wide mobile operations whose duty cycles are variable. For this reason the Commission decided that broadcasters must vacate the bottom 35 MHz of the 1,990–2,110 MHz TV BAS band.

8. Under the "emerging technologies" rulemaking, ET Docket 92-9, the newcomer user (MSS ATC) was obligated to make the incumbent user (grandfathered Channel A10 TV BAS stations) "whole."

9. In ET Docket 00-258, the Commission found that TV BAS and advanced wireless services (AWS), *aka* third-generation or "3G" devices, similarly could not share the same spectrum in the same area at the same time with TV BAS.

10. Indeed, it should be intuitively obvious to even the most inexperienced communications engineer, lawyer, or first year student of the principals of logic, that frequency sharing between CMRS (or CMRS-like) stations and TV BAS, and especially ENG applications, are inherently mutually exclusive uses of the same spectrum in the same area at the same time.

11. Grandfathered operation on TV BAS Channel A10, 2,483.5–2,500 MHz, is co-primary with MSS on an indefinitely “grandfathered” basis. See the July 25, 1985, R&O to General Docket 84-869. This co-equal status was re-affirmed in the July 16, 2004, ET Docket 00-258 Fourth R&O. See also non-federal government footnote NG147, in Part 2 of the FCC Rules, and Section 74.602(a)(2) of the TV BAS rules.

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[3] *Ibid.*, at Page 4.

[4] SBE first documented the nature of TV ENG operations to the Commission in its comments to General Docket 82-334 (Policy for Certain Bands Between 0.947 and 40 GHz).

12. According to the Commission's Universal Licensing Service (ULS), there are approximately seventy-five grandfathered Channel A10 TV BAS stations still licensed. Sixty are TV Pickup stations, typically operating with multiple transmitters, and using multiple electronic news gathering receive-only (ENG-RO) sites. The ENG-RO sites are usually placed near the tops of tall towers, on high-rise buildings, or mountain tops, so as to increase the likelihood that no matter where an ENG truck needs to transmit from in its market, it will have line-of-sight to at least one of the ENG-RO sites. See the SBE comments to IB Docket 02-364, and also to the predecessor IB Docket 01-185. EIBASS notes that while grandfathered A10 stations are not allowed to increase the number of transmitters, the Commission discontinued tracking the number of transmitters authorized by a TV Pickup license at least twenty years ago, and thus there is no means to track the number of grandfathered A10 transmitters that were in use in 1985. EIBASS further notes that digital emissions have been added to TV Pickup licenses that included A10 grandfather rights, since there was nothing in the 1985 rulemaking establishing those grandfather rights that prohibited a major-change addition of digital modulation.

13. In ET Docket 98-142 (7 GHz MSS downlinks), the Commission re-affirmed that, between co-equal users, the later-in-time station must protect the earlier-in-time station.

14. No co-equal but later-in-time user is likely to agree to deployment that would have to be shut down whenever a news event requires use of the same frequencies by an earlier-in-time TV Pickup station. Even if the later-in-time user were to agree to such a restriction, there would be no practical way to implement such a mechanism.

15. Grandfathered TV Pickup stations are in most of the same top-ten metropolitan areas where Globalstar wants to install S-band MSS ATC base stations. It is precisely because of the population concentrations in the top-ten metros that broadcasters continue to heavily use A10, and why Globalstar's suggestion, and unfortunately sometimes the Commission's suggestion, that broadcasters could simply use one of the other nine 2/2.5 GHz TV BAS channels, is so profoundly flawed: In the major metros, 2 GHz TV BAS Channels A1–A7, and 2.5 GHz TV BAS Channels A8 and A9, are already heavily used. Grandfathered TV BAS Channel A10 provides a vital safety valve for 2/2.5 GHz TV BAS spectrum. Broadcasters have been able to use this safety valve as part of voluntary, cooperative, real-time frequency coordination within their user base. The carefully-crafted and delicately balanced frequency coordination process between broadcast stations would be utterly unworkable if it had to contend with a co-channel

system of cellular-like MSS ATC base stations. Why? For MSS ATC operations channel use is triggered by subscribers wishing to make voice and data transmissions. Given the breaking news unpredictable nature of ENG operations, frequency sharing with a cellular-like architecture of base stations and hand-held devices is now, and is likely to remain, totally incompatible.

16. Further, the suggestion that grandfathered A10 licensees could simply move to a non-grandfathered TV BAS channel defeats the whole purpose of having grandfather rights, is self-serving.[5] It would undermine the delicate daily dance of TV ENG real time coordination in many markets. EIBASS wonders how Globalstar would react to a proposal to withdraw its ET Docket 92-9 Emerging Technologies grandfather rights for use of MSS spectrum without paying a dime in spectrum auction fees, and instead be required to bid at a spectrum auction for those rights, as the Communications Act now requires for all CMRS spectrum use.[6]

III. Globalstar Is Again Wrong When It Claims That the Re-farming of the 2.5 GHz TV BAS Band Is a Settled Issue

17. Globalstar also argues that the Commission has already ruled on the SBE and EIBASS requests to re-farm the 2.5 GHz TV BAS band, citing various Commission proceedings.[7] However, Globalstar avoids citing the last sentence of Paragraph 88 of the March 20, 2008, WT Docket 03-66 *Third Order on Reconsideration and Sixth Memorandum Opinion and Order and Fourth Memorandum Opinion and Order and Second Further Notice of Proposed Rulemaking and Declaratory Ruling*, where the Commission stated, at Paragraph 88:

> 88. *Background.* The new BRS Channel 1 band at 2496–2502 MHz, relocated from the 2150–2156 MHz band, partly overlaps a number of services in the 2483.5–2500 MHz band, including Broadcast Auxiliary Service (BAS) Channel A10 operations at 2483.5–2500 MHz. As an initial matter, we note that **a pending petition for reconsideration filed by the Society of Broadcast Engineers** asks us to adopt a revised band plan for BAS Channels A8–A10 that would remove BAS operations from the 2496–2502 MHz band. **We defer consideration of this matter to a separate decision.**

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[5] The prototype for sharing between broadcasters in the 2 GHz TV BAS band was devised in Los Angeles in 1984, for the Olympic games. The Southern California Frequency Coordinating Committee (SCFCC) worked closely with American Broadcasting Company (ABC) engineers to come up with a way to protect local stations while accommodating an influx of domestic and foreign broadcasters. The prototype, dubbed "The Home Channel Plan", was adopted by the SCFCC for daily use after the 1984 Olympics, and has been in use ever since. Various forms of the "Home Channel Plan" have been adopted for TV BAS real-time coordination in a number of large television markets.

[6] Spectrum auctions were added to the Communications Act, at Section 309(j), by the 1993 Omnibus Budget Reconciliation Act, and expanded by the 1997 Balanced Budget Act.

[7] Globalstar Opposition, at Page 5.

Thus, the A10 issue is still in play.

18. As evidenced by this instant filing, EIBASS has been diligent in its pursuit of the A10 issue in other rulemakings also impacting grandfathered TV BAS Channel A10, and EIBASS will continue to do so until the only practical solution to the flawed idea that S-band MSS ATC and *co-channel* grandfathered TV BAS Channel A10 can co-exist in the same area at the same time is adopted. The solution: Re-farm the 2.5 GHz TV BAS band, to eliminate that spectrum "train wreck" of co-channel operation.

IV. Failure of Open Range to Frequency Coordinate

19. Globalstar states that the failure of Open Range to frequency coordinate with two grandfathered TV BAS Channel A10 licensees in the Chicago area "says nothing about Globalstar's future ATC activities in the Big LEO band."[8] EIBASS begs to differ.

20. First, broadcasters have been repeatedly promised in every MSS ATC rulemaking since IB Docket 01-185 that such prior frequency coordination would take place. For example, pages 243–244 of the February 10, 2003, IB Docket 01-185 R&O:

> The operation of ATC base stations in the 2483.5-2500 MHz band could potentially cause interference to the grandfathered fixed and temporary-fixed stations in this band. Additionally, there is a potential for interference from the grandfathered fixed and temporary-fixed stations 10the ATC MTs. With the rules mentioned in the previous paragraph requiring the MSS operators to be notified of any move of a temporary-fixed station, we find that all of the information is available to the MSS operators to coordinate their base stations. **We therefore require the MSS ATC operator to coordinate the placement of its base stations with the grandfathered fixed and temporary-fixed stations in this band.**

And from Paragraph 75 of the July 16, 2004, IB Docket 02-364 R&O, Fourth R&O, and FNPRM:

> 75. We note that placing fixed and mobile except aeronautical mobile services in the upper portion of the S-band conflicts with ATC operations previously designated for use in the 2492.5-2498 MHz band.199 Because of this allocation change, we will move ATC operations down five megahertz to the 2487.5-2493 MHz band, which continues to allow at least two megahertz of MSS-only use between ATC operations and non-MSS services. Additionally, we find that moving ATC operations down five megahertz will not change our analysis in the *ATC Order* with regard to interference to unlicensed services and BAS. For example, ATC base station transmissions will be separated from BAS channel A8 (2450-2467 MHz) by at least 20.5 MHz, from BAS channel A9 (2467-2483.5 MHz) by at least 4 megahertz, and from unlicensed devices operating in the

[8] *Ibid.*, at Pages 3–4.

> 2400-2483.5 MHz band (such as WI-FI) by at least 4 megahertz. In the *ATC Order*, the Commission adopted an out-of-channel emissions limit of -44.1 dBW/30 kHz at the edge of the MSS licensee's authorized frequency assignment, which protects adjacent channel operations that are separated in frequency by at least 2 megahertz, and thus, operations below 2483.5 MHz are fully protected. **Furthermore, with regard to the grandfathered fixed terrestrial services in the 2483.5-2500 MHz band, the coordination needed by the CDMA MSS operator to prevent interference will not change.**

21. While in its July 22, 2011, reply comments Globalstar referred to the "alleged" failure of Open Range to frequency coordinate,[9] in its Opposition Globalstar acknowledges that Open Range failed to frequency coordinate. At least on that issue EIBASS and Globalstar can agree. As documented by the attached Figure 2 FCC Enforcement Bureau *Notification of Harmful Interference and Letter of Inquiry*, and Open Range's responses thereto, both obtained under the Freedom of Information Act, Open Range also acknowledges that it failed to frequency coordinate. As EIBASS sees it, there should be consequences to Open Range for its failure to frequency coordinate, resulting in now officially documented harmful interference to grandfathered TV BAS Channel A10 operations.

22. EIBASS has to wonder what is left to frequency coordinate for an always-on MSS ATC base station deep inside the operational area of a co-channel TV Pickup station. Not cover breaking news stories in northwestern Ohio? Ask Open Range to shut down its secondary STA operation so that a plane crash or tornado damage in St. John, or other Open Range fixed locations, can be covered? That would place the burden on the BAS licensee, the earlier user. Both should be obviously unacceptable solutions to the "frequency coordination" that Globalstar so cavalierly presumes it could undertake.

23. While Globalstar MSS ATC base stations would not be always transmitting like the Open Range system, a system of cellular-like terrestrial ATC base stations would not be individually controlled, but rather would automatically transmit in response to subscribers wanting to make telephone calls or other communications. Contrast this to the successful co-channel TV BAS sharing with NASA at 2 GHz, and with mobile POFS licensees at 2.5 GHz (generally public safety robot cameras or surveillance cameras). Sharing has worked with those users because there are relatively few such shared stations, and they are under the direct, manual control of their operators, whereas a terrestrial MSS ATC architecture would involve hundreds or thousands of base stations, under automatic control.

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[9] Globalstar reply comments, at page 3.

24. If an Open Range base station at St. John, Indiana, approximately 90 km from the ENG-RO sites at Sears Tower and the Hancock Center caused interference to ENG operations, the interference caused by Globalstar's proposed building of hundreds of MSS ATC base stations in the Chicago metro (one of Globalstar's lucrative, cherry-picked metros) would be massively worse. The Open Range interference is not just a smoking gun; it's a smoking howitzer. As a result of the now officially documented Open Range interference, there should be no more questions whether S-band MSS ATC and grandfathered TV BAS A10 operations could somehow magically co-exist in the same area at the same time.

V. Failure of Globalstar to Frequency Coordinate

25. In its March 1, 2005, E970381 modification application, FCC File Number SES-MOD-INTR2005-00456, Globalstar proposed to deploy S-Band MSS ATC base stations in the top-ten U.S. cities. On May 16, 2005, SBE filed an informal objection to the Globalstar application, pointing out that of the top-ten cities, seven had grandfathered TV BAS Channel A10 operations, where co-channel MSS ATC operation would be unlikely to be able to be successfully frequency coordinated; namely,

Chicago
Detroit
Los Angeles
New York
Philadelphia
San Francisco
Washington, DC.

26. EIBASS has checked with the BAS frequency coordinators in these seven metros, and not a single one reports being contacted by Globalstar, or any commercial microwave frequency coordinator (CMFC) indicating that it was acting on Globstar's behalf. Further, each of the contacted TV BAS frequency coordinators has confirmed to EIBASS that grandfathered TV BAS Channel A10 continues to be heavily used; indeed, in Los Angeles, the second largest TV market in the United States, it is the Home Channel[10] for the ENG operations of Station KCAL-TV, D09 (V09), Los Angeles. Yet Globalstar claims that it "fully aware of its obligation to

[10] The prototype for 2 GHz sharing was devised in Los Angeles in1984 for the Olympic games. The Southern California Frequency Coordinating Committee (SCFCC) worked closely with American Broadcasting Company engineers to come up with a way to protect local stations while accommodating an influx of domestic and foreign broadcasters. The prototype, dubbed "The Home Channel Plan," was adopted by the SCFCC for daily use after the 1984 Olympics, and has been in use ever since. Various forms of the "Home Channel Plan" have been adopted for 2 GHz real-time coordination in a number of large television markets.

protect BAS operations form interference under the Commission's rules and its own ATC authorization, and it intends to comply fully with these requirements."[11] Given that six years have now passed since Globalstar's 2005 MSS ATC application, the failure of Globalstar to have contacted any of the Above-1 GHz BAS coordinators of record in even a single top-ten market with grandfathered A10 operations contradicts Globalstar's claim that it will frequency coordinate with co-primary and earlier-in-time grandfathered A10 licensees.

VI. Frequency Coordination Benchmark

27. EIBASS has to wonder what there is to coordinate, anyway. TV Pickup stations have licensed and protected operational areas because for most news operations, the transmitting location is not known in advance. That's why so many broadcasters using ENG have gone to the expense of building multiple ENG-RO sites in their operational areas.[12] In EIBASS' view, a co-channel MSS ATC entity could only be able claim to have successfully frequency coordinated if it could demonstrate the same protection criteria adopted in the ET Docket 00-258 rulemaking for Department of Defense (DoD) 2 GHz uplinks at 11 specified sites sharing spectrum: Namely, no more than a 0.5 dB degradation of the noise floor of the receivers installed at ENG-RO sites in the area.[13]

28. As noted at Paragraph 6 of the November 22, 2010, EIBASS reply comments to the ET Docket 10-153 ("BAS Flexibility") rulemaking, and again at Paragraph 4 of the June 27, 2011, EIBASS comments to the ET Docket 10-153 Further Notice of Inquiry (FNOI), the calculations demonstrating this protection of an ENG-RO site cannot assume any receiving antenna directivity, because ENG-RO sites use either remotely steerable dishes, aimed in real-time at the location of an ENG truck, or omnidirectional receiving antenna(s). Also, no polarization discrimination can be taken, because ENG trucks are polarization-agile, using the best polarization for each path. While terrain blockage can be taken into account, the likelihood of

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11 Globalstar Opposition, at Page 4.

12 There is another benefit of having multiple 2 GHz ENG receive sites: They often permit channel re-use by virtue of different mobile transmitters, using directional antennas, to access different sites on the same channel on different paths. This allows licensees to successfully operate in the limited 2/2.5 GHz TV BAS spectrum, albeit at a high initial cost for engineering, equipment, and installation, and high recurring monthly lease fees typical at hilltop or building sites. As Sprint Nextel found out, the cost to make 2 GHz ENG users "whole" was significant. This level of real-time frequency coordination would, of course, be impossible for a system of subscriber-initiated MSS ATC mobile and base station transmissions.

13 See the October 21, 2004, ET Docket 00-258 Seventh R&O, at Paragraph 29, Footnote 63. See also the April 30, 2009, SBE-DoD Memorandum of Understanding regarding protection of 2 GHz ENG-RO sites; this document is available in the ECFS docket record, at http://fjallfoss.fcc.gov/ecfs/document/view.action?id=7020354936 .

such blockage would be almost nonexistent for a cellular-like base station architecture and the fact that ENG-RO sites, as previously noted, are intentionally placed near the tops of tall towers, on mountain tops, or atop tall buildings, to increase the likelihood of line-of-sight at any news location in a TV station's market.

VII. Globalstar Opposition Is at Odds with Its WT Docket 03-66 Comments

29. EIBASS finds it ironic that in the WT Docket 03-66 Fourth FNRPM, Globalstar filed comments[14] arguing against relaxed out-of-band emissions (OOBE) for Broadband Radio Service (BRS) stations, because of the interference threat to its S-band MSS ATC operations. Globalstar did not entertain the notion of frequency coordination being able to avoid interference between BRS1 base stations and MSS ATC base stations, even though both are fixed-site stations. Why? Because the MSS handsets that would communicate with MSS ATC base stations are mobile devices, whose location is never known in advance. It is the identical situation for grandfathered TV BAS Channel A10 ENG operations.

30. The allocations for MSS were done in a time before cellular use exploded; it is now difficult to find areas where cellular coverage does not exist in any form.[15] The approach of converting MSS to terrestrial based cellular by adding a significant number of ATC base station transmitters stacks the deck in favor of MSS in at least two ways: It gives the MSS operator the economic advantage of building a terrestrial cellular network without having paid anything in spectrum auction fees, and creates an interference potential to other services such as BAS (for S-band MSS ATC; *i.e.*, Globalstar and Open Range) and GPS (for L-band MSS, ATC; *i.e.*, LightSquared). Both BAS and GPS use have skyrocketed in a manner not conceived by the Commission or incumbent users when those original allocations were made. EIBASS believes that should S-band MSS ATC be allowed without first clearing the band of incumbent BAS

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14 July 7, 2011, Globalstar comments, at Page 3; July 22, 2011, Globalstar reply comments, at Page 3.

15 For example, the most recent (December, 2010) Cellular Telecommunications Industry Association (CTIA) *Semi-annual Telephone Wireless Survey* shows that the number of terrestrial cell sites has gone from slightly over ten thousand in 1992 to more than two-hundred-fifty thousand in 2010. The *Wireless Quick Facts* portion of the CTIA web site shows that 96% of the U.S. population has access to some form of terrestrial CMRS.

In the February 4, 2008, WT Docket 07-71 Twelfth Report, the Commission found that 99.8% of the total U.S. population have one or more different CMRS operators, that 99.3% of the U.S. population living in rural counties have access to one or more CMRS providers, and that more than 95% of the U.S. population lives in areas with at least three competing CMRS providers (Twelfth Report, at the page 5 Executive Summary).

users the use of grandfathered A10 would have to effectively cease, making a mockery of the grandfather rights.

VIII. ET Dockets 09-51 and 10-235

31. In the ET Docket 09-51 (National Broadband Plan) and ET Docket 10-235 (VHF Improvements) rulemakings, the Commission has proposed clearing TV channels 32–51, to create more spectrum for broadband/CMRS use.[16] The Commission proposes re-packing TV stations now on Channels 32–51 into a new, super in-core Channels 2–31, by having TV stations share the 19.4 mbps data streams of the remaining 8-VSB digital TV channels. If this proposal comes to pass, then it would be logical to expect S-band MSS ATC licensees to share spectrum with properly-allocated, CMRS-only spectrum users. Then 2.5 GHz TV BAS could be expanded from its present 2,450–2,483.5 MHz/grandfathered 2,483.5–2,500 MHz, to 2,450–2,495 MHz (*i.e.*, three 15-MHz wide digital channels) or to 2,450–2,498 MHz (*i.e.*, four 12-MHz wide digital channels). The three-digital TV BAS channels re-allocation would solve entirely the problematic Broadband Radio Service (BRS) Channel 1 allocation at 2,496–2,502 MHz that the Commission created in the WT Docket 03-66 rulemaking,[17] and the four-digital TV BAS channels would reduce the overlap from 4 MHz to just 2 MHz.

IX. Summary

32. EIBASS continues to point out to the Commission that Globalstar has made assertions on a number of matters in this proceeding that are not supported by the facts. Compounding their faulty assertions are assumptions that fly in the face of the laws of physics as we, and most qualified communications engineers, commonly understand them.

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16 November 30, 2010, ET Docket 10-235 NRPM, at Paragraph 19. June 2010 Omnibus Broadband Initiative (OBI) Technical Paper No. 3 (OBI3), at page 4 (reallocation of Channels 32–51) and pages 14-16 (TV channel sharing).

17 EIBASS notes that the FCC inclusion of BRS1 at 2,496–2,502 MHz and BRS2 at 2,618–2,624 MHz, and the necessary narrowing of the BRS Lower Band Segment (LBS) and Upper Band Segment (UBS) channels from 6 MHz wide channels to 5.5 MHz wide channels, was contrary to the band plan proposed in the October 7, 2002, Wireless Cable Association (WCA)/Catholic Television Network (CTN)/National ITFS Association (NIA) White Paper. This White Paper became RM-11614, and then WT Docket 03-66. It resulted in the re-farming of the 2,500–2,686 MHz Multipoint Multichannel Distribution Service (MMDS) and Instructional Television Fixed Service (ITFS) bands to the 2,496–2,686 MHz Broadband Radio Service (BRS)/Educational Broadband Service (EBS) bands, thus creating a 4 MHz overlap with grandfathered TV BAS Channel A10. WCA is now the Wireless Cable Association International (WCAI), and NIA is now the National EBS Association (NEBSA).

X. List of Figures

33. The following figures or exhibits have been prepared as a part of these ET Docket reply comments to the Globalstar *Opposition to Petition for Reconsideration* of the EIBASS *Petition for Reconsideration* of the April 6, 2011, ET Docket 10-142 R&O:

1. SBE proposal for re-farming of the 2.5 GHz TV BAS band
2. Copy of FCC Enforcement Bureau case documenting Open Range interference to grandfathered TV BAS Channel A10 operations in the Chicago area.

Respectfully submitted,

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September 6, 2011

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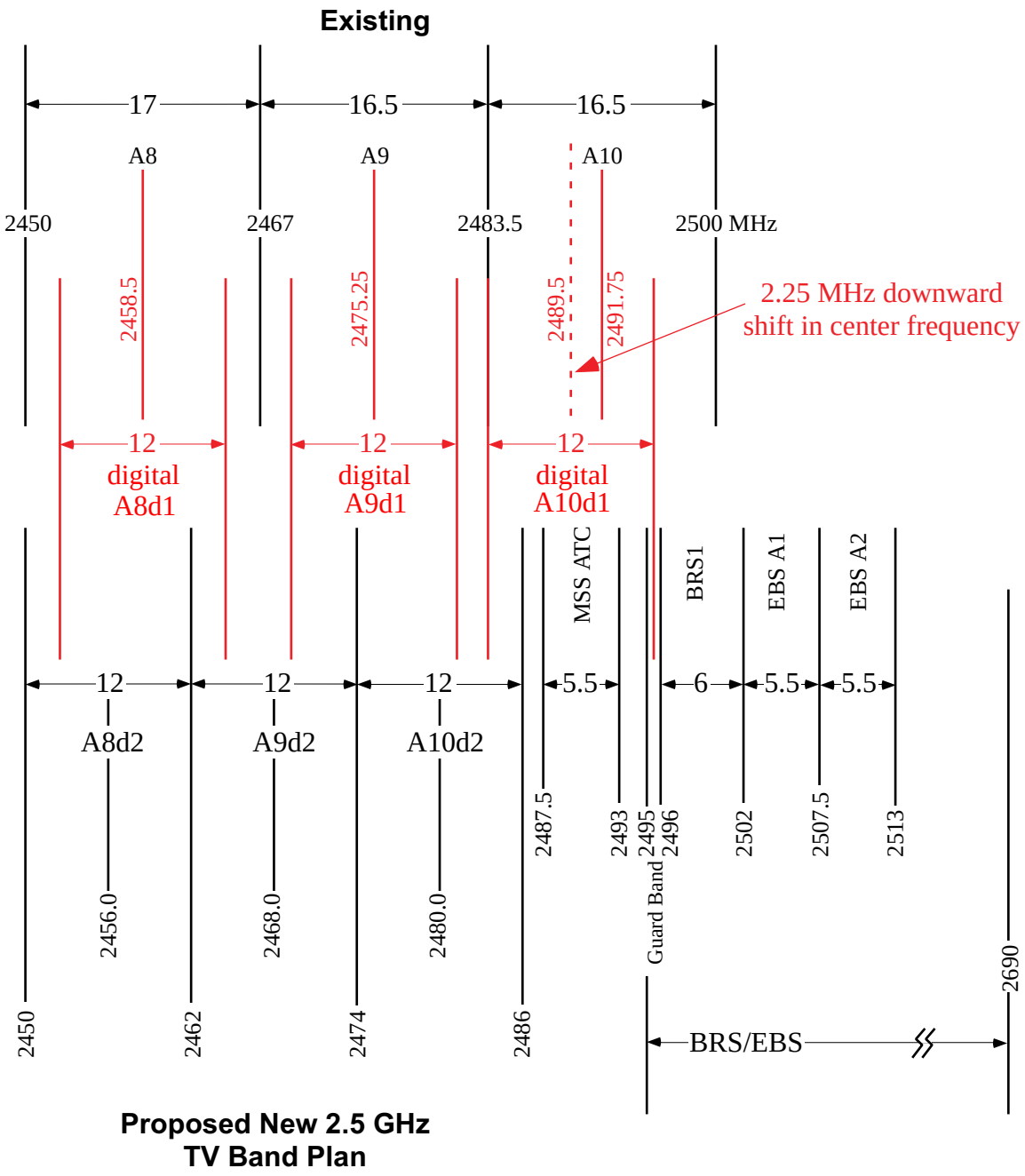
EIBASS Reply To Globalstar Opposition to the EIBASS Petition for Reconsideration of the ET Docket 10-142 Report and Order

Existing vs SBE-Proposed New 2.5 GHz TV BAS Band Plan



All frequencies and bandwidths are in MHz.

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NORTHEAST REGION

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COPY

February 4, 2011

Open Range Communications, Inc.
Greenwood Village, CO

NOTIFICATION OF HARMFUL INTERFERENCE AND LETTER OF INQUIRY

Case Number: EB-11-CG-0015
Document Number: W201132320001

On January 24, 2011, in response to an interference complaint from two TV Pickup Stations, an agent from this office confirmed by direction finding techniques that radio emissions in the 2483.5-2495 MHz band were emanating from an antenna structure located at 10870 West 93rd Street in St. John, Indiana (ASR # 1026924). The agent determined that the emissions originated from equipment located on the antenna structure that was operated by Open Range Communications, Inc. ("Open Range"). These transmissions were interfering with TV Pickup Stations KB55028 and KQ8499 which operate in the Chicago Metro area. After being notified by the FCC agent, technicians from Open Range conducted tests with technicians from the TV Pickup Stations and confirmed that transmissions from Open Range's sites in St. John, Indiana were the source of the harmful interference to reception of the TV Pickup transmissions.

Open Range was granted a Special Temporary Authorization to continue operating on spectrum previously leased from Globalstar after Globalstar's authorization to operate on that spectrum was suspended by the Commission.[1] The *Open Range STA* allows Open Range to continue operating on the spectrum while it seeks access to other spectrum.[2] The *Open Range STA* provides that Open Range can continue operating on the spectrum subject to the condition that, *inter alia*, "Open Range shall not cause harmful interference to, and shall not claim protection from, any other lawfully operating station [and that,]. . . [i]n the event harmful interference results from

[1] *Globalstar Licensee LLC, Application for Modification of License to Extend Dates for Coming into Compliance with Ancillary Terrestrial Component Rules and Open Range Request for Special Temporary Authority*, Order, DA 10-1740 (IB, WTB, OET rel. Sept. 14, 2010) ("*Open Range STA*"); *recon. granted in part, Open Range, Request for Extension of Special Temporary Authority*, Order on Reconsideration, DA 10-1801 (IB, WTB, OET, rel. Sept. 23, 2010)(extending "*Open Range STA*" until January 31, 2011).

[2] On January 20, 2011, the International Bureau's Satellite Division granted an extension of the *Open Range STA* until April 1, 2011. *See Public Notice*, DA 11-105, SAT-STA-20110106-00003 (IB, rel. Jan. 21, 2011).

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operation pursuant to this authorization, Open Range shall cease operations immediately upon notification of such interference, and shall immediately inform the Federal Communications Commission, in writing, of the incident."[3] In addition, the *Open Range STA* provided that "[o]perations shall be subject to the technical specifications and conditions identified in the *Globalstar/Open Range ATC Order*,[4] including the conditions specified in paragraphs 35, 36, 41(b) and 41(c) of that Order."[5] Because Open Range's authority to operate is subject to the conditions set forth in the *Open Range STA*, a violation of any of those conditions would void the authorization and Open Range's continued operation on the spectrum previously leased from Globalstar without a valid authorization would constitute a violation of 47 U.S.C. § 301.

Open Range is hereby notified that its operations in the 2483.5-2495 MHz band were causing harmful interference to TV Pickup Stations KB55028 and KQ8499 in the Chicago, Illinois area. If, after receipt of this Notification, Open Range's operations in the 2483.5-2495 MHz band cause harmful interference and/or are inconsistent with the technical specifications and conditions identified in the *Globalstar/Open Range ATC Order*, such operations will be considered a violation of 47 U.S.C. § 301 and could subject Open Range to severe penalties, including, but not limited to, substantial monetary fines, *in rem* arrest action against the offending radio equipment, and criminal sanctions including imprisonment. (See 47 U.S.C. §§ 401, 501, 503 and 510).

UNAUTHORIZED OPERATION MUST CEASE IMMEDIATELY.

You have five (5) days from the date of this Notice to provide the written report required pursuant to the condition set forth in paragraph 54(d) of the *Open Range STA*.

In addition, pursuant to sections 308(b) and 403 of the Communications Act of 1934, as amended,[6] and section 1.17 of the Rules[7], Open Range is directed to provide within ten (10) days a complete answer to the following questions along with the requested information and any relevant documents:

(1) Describe the steps you are taking to ensure that your operations do not interfere with licensed stations in the Chicago area, as well as any other licensed stations in other areas covered by the *Open Range STA*.

(2) Confirm, for each of your markets, that your operations currently comply, and that at all times previously have complied, with the technical specifications and conditions identified in the *Globalstar/Open Range ATC Order*, including the conditions specified in paragraphs 35, 36, 41(b) and 41(c) of that Order. If you find that any of your operations are at variance from such technical specifications and/or conditions, provide a detailed description as to how the operations are at variance, as well as a detailed

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[3] *Open Range STA* at para. 54 (d).

[4] *Globalstar Licensee LLC, Application for Modification of License for Operation of Ancillary Terrestrial Component Facilities, Order and Authorization*, 23 FCC Rcd 15975 (2008) (Copps, Adelstein, and Tate issuing separate statements; Martin and McDowell dissenting) ("*Globalstar/Open Range ATC Order*").

[5] *Open Range STA* at para. 54(c).

[6] 47 U.S.C. § 308(b) and § 403.

[7] 47 C.F.R. § 1.17.

report as to how and when Open Range plans to bring such operations into compliance.

The response to this inquiry and the report submitted pursuant to paragraph 54(d) of the *Open Range STA* must be supported by a sworn statement, signed by you, attesting to the truth and accuracy of the response and sent to the following address:

Federal Communications Commission
Chicago District Office
1550 North Northwest Hwy, Room 306
Park Ridge, Illinois 60068

To knowingly and willfully make any false statement or conceal any material fact in reply to this inquiry is punishable by fine or imprisonment. *See* 18 U.S.C. § 1801; *see also* 47 C.F.R. § 1.17. Failure to respond appropriately to a Bureau Letter of Inquiry constitutes a violation of the Communications Act and our rules. *See SBC Communications, Inc.*, Order of Forfeiture, 17 FCC Rcd 7589 (2002); *Globcom, Inc.*, Notice of Apparent Liability for Forfeiture and Order, 18 FCC Rcd 19893, n. 36 (2003).

Under the Privacy Act of 1974, 5 U.S.C. § 552a(e)(3), we are informing you that the Commission's staff will use all relevant material information before it to determine what, if any, enforcement action is required to ensure your compliance with the Communications Act and FCC Rules. This will include any information that you disclose in your reply.

James M. Roop

James M. Roop
District Director
Chicago District Office

Attachment

Before the
FEDERAL COMMUNICATIONS COMMISSION

OPEN RANGE COMMUNICATIONS INC.	)	Case Number: EB-11-CG-0015 Document Number W201132320001

RESPONSE OF OPEN RANGE COMMUNICATIONS INC.

Open Range Communications Inc. ("Open Range") hereby responds to the Notification of Harmful Interference and Letter of Inquiry sent to Open Range on February 4, 2011 ("Notification") regarding an interference complaint from KB55028 and KQ8499 (collectively the "TV Pickup Stations").

Open Range was contacted by the SBE Frequency Coordinator, Chicago, Mr. Craig Strom, from WLS TV on January 25, 2011 regarding a possible interference problem. Mr. Strom requested that Open Range schedule on/off testing to determine if Open Range was the source of the signals detected, and, if so, from which sites. On January 26, 2011, Open Range's technicians, together with Mr. Strom, conducted testing to determine whether Open Range's sites were the source of the interference, and to determine the steps to take to mitigate any interference. Following this testing, Open Range indicated that it would modify its stations to eliminate the interference and requested that KQ8499 representatives coordinate additional testing following these modifications to confirm that they were effective. That same day, counsel for Open Range contacted Mr. James Roop of the Chicago District Office by telephone and described the actions that were underway. Open Range's counsel followed up that

conversation with the attached email (Attachment 1) that evening reporting the results of the initial tests and the action Open Range was taking. Additionally, Open Range requested that Mr. Strom provide direct contact information for the representatives of KQ8499 and KB55028.

Open Range contacted a KQ8499 representative and was informed that its personnel would not be available immediately to perform cooperative testing to determine whether the actions to be taken by Open Range eliminated the interference. Nevertheless, beginning on January 28, 2011, and concluding on January 29, Open Range made changes to its operations designed to eliminate the interference, which involved changing pointing directions and downtilts on sector antennas at certain sites.

On January 31, 2011, Open Range had a telephone conference with a representative of KQ8499, during which he indicated that they had taken baseline measurements on January 27, 2011, and might be able to take post-mitigation measurements on February 1, 2011, but that they would not be able to respond to Open Range for several days due to the then-upcoming winter storms.

Also on January 31, 2011, Open Range contacted representatives of KB55028 to attempt to schedule testing to confirm that the changes to Open Range's operations had resolved the interference issue. The KB55028 representative indicated that he was out of town for the week, but would return the following week and contact Open Range representatives.

On February 8, 2011, representatives of both KQ8499 and KB55028 agreed to conduct additional on/off testing to occur on the morning of February 9th. Tests were conducted on February 9, 2011 during a break between morning and noon broadcasts of KQ8499 and

KB55028. Tests were curtailed when the stations required their assets to be assigned to support their noon broadcasts.

As a result of the on/off testing conducted on February 9th, two Open Range sectors were identified as being received on KQ8499 and KB55028 receivers at an unacceptable level. Open Range is therefore shutting down those sectors until a solution to the interference problem can be achieved. Open Range provides VOIP to certain customers on those sectors and as part of that service provides E911. Pursuant to Section 9.5(e)(1) of the FCC Rules and Regulations, 47 C.F.R. § 9.5(e)(1)Open Range must notify affected customers prior to suspending service. Open Range has identified those customers who will lose E911 services and is currently providing them notification of the impending loss of service. Notifications have been completed for the Bradley sector and operation of the sector has been discontinued. Open Range expects the remaining notifications to be completed today at which time the second sector will be turned off. Representatives of KQ8499 and KB55028 have been notified of these actions and they have consented to allow these notifications to proceed before operations are suspended. A status update has been scheduled for February 11, 2001 with both operators. Additional on/off testing will be conducted when KQ8499 and KB55028 resources are available to ensure no other Open Range sites are impacting KQ8499 and KB55028 operations. No reports of interference have been received, but with the multiple sites of all operators in the area, additional testing is desired by Open Range.

The Notification also instructs Open Range to support this report with a sworn statement attesting to the truth and accuracy of this response. Open Range is providing, pursuant to Section 1.16 of the Commission's rules, 47 C.F.R. § 1.16, the attached unsworn declaration

under penalty of perjury of Daniel R. Vortherms, VP Technology of Open Range Communications (Attachment 2).

The Notification further instructs Open Range, within ten days: (1) to describe the steps Open Range is taking to ensure that its operations do not interfere with licensed stations in the Chicago area, as well as any other licensed stations in other areas covered by the Open Range STA; and (2) to confirm that, for each market where Open Range operates, its operations currently comply, and at all times previously have complied, with the technical specifications and conditions identified in the *STA Order*. Open Range will respond fully to this directive by separate correspondence. However, Open Range responds here that it is committed to its obligation to avoid harmful interference as a condition of its operation under the *STA Order*, and to operating in accordance with all applicable Commission rules.

Respectfully submitted

Open Range Communications Inc.

by its attorney

Jae D. Edge

Before the
FEDERAL COMMUNICATIONS COMMISSION

OPEN RANGE COMMUNICATIONS INC.	)	Case Number: EB-11-CG-0015 Document Number W201132320001

SECOND RESPONSE OF OPEN RANGE COMMUNICATIONS INC.

Open Range Communications Inc. ("Open Range") hereby submits its second response to the Notification of Harmful Interference and Letter of Inquiry sent to Open Range on February 4, 2011 ("Notification") regarding Open Range's operation under Special Temporary Authority ("STA") pursuant to the Commission's September 14, 2010 Order ("*STA Order*"),[1] and, in particular, a complaint from KB55028 and KQ8499 (collectively the "TV Pickup Stations"). On February 9, 2011, Open Range submitted a response to the Notification that addressed matters to which the Notification required a response within five days ("First Response"). The Notification further instructs Open Range, within ten days: (1) to describe the steps Open Range is taking to ensure that its operations do not interfere with licensed stations in the Chicago area, as well as any other licensed stations in other areas covered by the Open Range STA; and (2) to confirm Open Range's compliance with the technical specifications and conditions identified in the Commission's October 31, 2008 Order and Authorization modifying Globalstar Licensee LLC's

[1] *See Globalstar Licensee LLC, Application for Modification of License to Extend Dates for Coming into Compliance with Ancillary Terrestrial Component Rules and Open Range Request for Special Temporary Authority*, Order, DA 10-1740 (IB, WTB, OET rel. Sept. 14, 2010) ("*STA Order*").

authority for an ancillary terrestrial component and permitting use of the WiMAX air interface protocol ("*Globalstar ATC Order and Authorization*").[2] Open Range provides the following information in response to both inquiries.

With respect to the first inquiry, as reported in the First Response, and in e-mail correspondence to you of February 9, 2011, Open Range has shut down two sectors that were identified as being received on KQ8499 and KB55028 at a level that could interfere with the operation of those stations. Open Range will not resume operation of those sectors until a solution to the potential interference problem can be implemented. Furthermore, Open Range is in the process of constructing other sites in the Chicago area. To avoid the possibility of causing interference, Open Range will not launch those sites until it either acquires the right to operate on alternative spectrum or until it has taken steps in cooperation with licensed users to ensure that Open Range's STA operations will not cause interference.

With respect to the second question, Open Range operates pursuant to its STA on equipment which complies with the FCC "Equipment Authorization Guidance for Part 25 Transceivers, Appendix B, Open Range TDD – WiMAX ATC Devices" which references and incorporates the requirement of the *Globalstar ATC Order and Authorization*.[3] Open Range has not altered or modified the equipment for its operations, and Open Range's operations comply with the peak EIRP, out-of-channel emission limits, and out-of-band emission limits specified in

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[2] *See Globalstar Licensee LLC, Application for Modification of License for Operating of Ancillary Terrestrial Component Facilities*, Order and Authorization, 23 FCC Rcd 15975 (2008).

[3] Open Range operates equipment with FCC identifiers LKT-BMAX-OR-25 and MXF-WIXFBR-103.

the operational specifications and conditions set forth in the *STA Order* and in applicable Commission rules.

Paragraphs 33 and 41(b) of the *Globalstar ATC Order and Authorization* require that ATC mobile terminals be coordinated with other stations operating in the band. Open Range notes that its customer premises equipment ("CPE") is designed to be used in a customer's residence, and further notes that its network is configured so that the CPE will not connect to the network if it is more than eight kilometers from a base station, limiting the area in which CPE can operate. As a result, coordination of the CPE is achieved by coordination of the associated base station. Open Range has not coordinated its base stations to date, but will coordinate with licensed users for its future deployment of any base stations.

Except for the two Chicago BAS stations identified above, Open Range has not received a complaint of harmful interference from a grandfathered BAS user or other licensed user, and Open Range does not believe that it has caused harmful interference to any such user. In the event any licensed user contacts Open Range with a notice of potential harmful interference, Open Range will promptly take steps to identify and mitigate the problem or cease operations.

Open Range is also in the process of undertaking a comprehensive review and optimization of its operations in all sectors. Open Range is reviewing the design and operation of each sector in its network nationwide to validate that all antennas are set as designed for both azimuth and inclination for interference mitigation, and to ensure that equipment is operating within specifications.

The Notification also instructs Open Range to support this report with a sworn statement attesting to the truth and accuracy of this response. Open Range is providing, pursuant to

Section 1.16 of the Commission's rules, 47 C.F.R. § 1.16, the attached unsworn declaration under penalty of perjury of Daniel R. Vortherms, VP Technology of Open Range Communications (Attachment 1).

Respectfully submitted

Open Range Communications Inc.

by its attorney

Joe D. Edge

Before the
FEDERAL COMMUNICATIONS COMMISSION

OPEN RANGE COMMUNICATIONS INC.	)	Case Number: EB-11-CG-0015 Document Number W201132320001

THIRD RESPONSE OF OPEN RANGE COMMUNICATIONS INC.

Open Range Communications Inc. ("Open Range") hereby submits its third response to the Notification of Harmful Interference and Letter of Inquiry sent to Open Range on February 4, 2011 ("Notification") regarding Open Range's operation under Special Temporary Authority ("STA") pursuant to the Commission's September 14, 2010 Order ("*STA Order*"),[1] and, in particular, a complaint from KB55028 and KQ8499 (collectively the "TV Pickup Stations"). On February 9, 2011, Open Range submitted a response to the Notification that addressed matters to which the Notification required a response within five days ("First Response"). On February 14, 2011, Open Range submitted a response to the Notification that addressed other matters to which the Notification required a response within ten days ("Second Response").

Among other things, the Notification directed Open Range, in its Second Response, to address Open Range's compliance with the technical specifications and conditions identified in

[1] *See Globalstar Licensee LLC, Application for Modification of License to Extend Dates for Coming into Compliance with Ancillary Terrestrial Component Rules and Open Range Request for Special Temporary Authority*, Order, DA 10-1740 (IB, WTB, OET rel. Sept. 14, 2010) ("*STA Order*").

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the Commission's October 31, 2008 Order and Authorization modifying Globalstar Licensee LLC's authority for an ancillary terrestrial component and permitting use of the WiMAX air interface protocol ("*Globalstar ATC Order and Authorization*").[2] Paragraphs 33 and 41(b) of the *Globalstar ATC Order and Authorization* require that ATC mobile terminals be coordinated with other stations operating in the band. In its Second Response, Open Range noted that its customer premises equipment ("CPE") is designed to be used in a customer's residence, and Open Range further notes that its network is being configured so that the CPE will not connect to the network if it is more than eight kilometers from a base station, limiting the area in which CPE can operate. As a result, coordination of the CPE is achieved by coordination of the associated base station. Open Range further reported that it had not coordinated its base stations to date, but will coordinate with licensed users for its future deployment of any base stations. Open Range is now in the process of coordinating its *existing* base stations, and those on the current build plan, with licensed users, and submits this Third Response to update the Commission on those efforts, as well as to update the Commission on Open Range's ongoing efforts with stations KQ8499 and KB55028 in Chicago.

Open Range has searched the Commission's Universal Licensing System and identified a total of 28 call signs in the relevant band that could potentially be affected by Open Range's existing operations. Open Range began transmitting notification letters to those licensed users on February 23, and has documented receipt of its correspondence with all licensed users. Open Range has also begun following up with these licensees by phone to further ensure that the

[2] *See Globalstar Licensee LLC, Application for Modification of License for Operating of Ancillary Terrestrial Component Facilities*, Order and Authorization, 23 FCC Rcd 15975 (2008).

notifications were received and to address any issues that may arise. As of March 2, Open Range has made direct contact with representatives of 12 of these 28 call signs. Open Range will provide a further update once it has confirmed that its efforts have been successful with all 28 call signs.

With respect to its Chicago operations, Open Range reported in the First Response, and in e-mail correspondence to you of February 9, 2011, that it had shut down two sectors that were identified as being received on KQ8499 and KB55028 at a level that could interfere with the operation of those stations. At this time, Open Range continues to conduct testing with the licensees of those stations to identify a solution that may allow Open Range to resume operation of those sectors with the approval of the Chicago operator, and Open Range has shut down a third sector that has been identified as a potential problem. The sectors in question have been physically modified to prevent inadvertent radiation from those sectors. Open Range again confirms that it will not resume these operations until a solution to the potential interference problem can be implemented.

Respectfully submitted

Open Range Communications Inc.

by its attorney

/s/ Joe D. Edge
Joe D. Edge